

SKETCHBOOK

PICTURE STORIES OF PLANES AND PILOTS



THE STORY OF

GENERAL "HAP" ARNOLD

WARTIME CHIEF OF THE U.S. ARMY AIR FORCES

AND HIS MESSAGE TO

THE YOUNG PEOPLE OF AMERICA







Volume | Number 2

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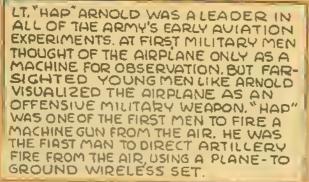
THE THRILLING TRUE EXPLOITS OF AMERICA'S HEROIC AIRMEN

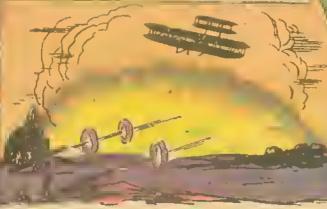


HENRY H. ARNOLD, GENERAL OF THE ARMY, COMMANDING GENERAL OF THE UNITED STATES ARMY AIR FORCES, HAS WORN THE WINGS OF AN ARMY AVIATOR FOR THIRTY-FIVE YEARS. THE STORY OF "HAP"ARNOLD IS THE STORY OF THE WORLD'S GREATEST AIR ARMY, THE UNITED STATES ARMY AIR FORCES.











IN 1912, "HAP" ARNOLD WON THE MACKAY TROPHY FOR MAKING A RECONNAISSANCE FLIGHT DURING ARMY MANEUVERS. MAKING NOTES DURING A THIRTY-MILE, NON-STOP FLIGHT, HE PROVED TO MILITARY GROUND OFFICERS THE VALUE OF AERIAL OBSERVATION.



DURING WORLD WAR1, AS ASSISTANT TO GENERAL BILLY MITCHELL, ARNOLD HADCHARGE OF JOTRAINING SCHOOLS, IS,000 OFFICERS, AND 125,000 MEN.







AFTER GENERAL MITCHELL'S COURTMARTIAL, "HAP" ARNOLO WAS SHIFTED AROUND IN A NUMBER OF DIFFERENT ASSIGNMENTS. HE WAS A "FLYING" MAN AND IT WAS NOT EASY FOR HIM TO GET ALONG WITH THE OLO TIMERS IN THE ARMY WHO OLD NOT AGREE WITH GENERAL MITCHELL'S BELIEF INTHE NEED FOR GREATER AIR POWER FOR AMERICA. "HAP" ARNOLD BELIEVED AS MITCHELL DID, IN THE ABILITY OF HIGH-ALTITUDE, LOING-RANGE HEAVY BOMBERS. REGARDLESS OF HIS ASSIGMENT, "HAP" STUDIED THE STRATEGY OF HEAVY BOMBAROMENT.



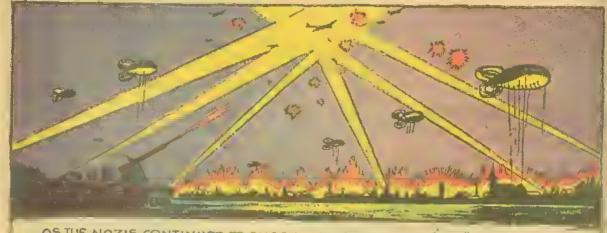
IN 1935, "HAP"ARNOLD WAS APPOINTED ASSISTANT CHIEF OF THE AIR CORPS, WITH THE RANK OF BRIGADIER GENERAL, IN 1936, GENERAL ARNOLD AGAIN WON THE MACKEY TROPHY FOR" THE MOST MERITORIOUS FLIGHT OF THE YEAR." HE ALSO RECEIVED THE DISTINGUISHED FLYING CROSS, FOR EXTRAORDINARY ACHIEVEMENT WHILE PARTICIPATING IN AN AERIAL FLIGHT AS PILOT AND

COMMANDING OFFICER OF A BOMBARD-MENT SQUADRON OF TEN AIRPLANES (MARTIN B-10 BOMBERS) FROM WASHINGTON, O.C., TO FAIRBANKS, ALASKA, AND RETURN..." HIS SKILL AND FEARLESS LEADERSHIP ENABLED HIS SWURDEN TO LOT FRETE AN 18,000-MILE FLIGHT UNDER VERY DANGEROUS FLYING CONDITIONS WITHOUT LOSS OF LIFE OR EQUIPMENT.



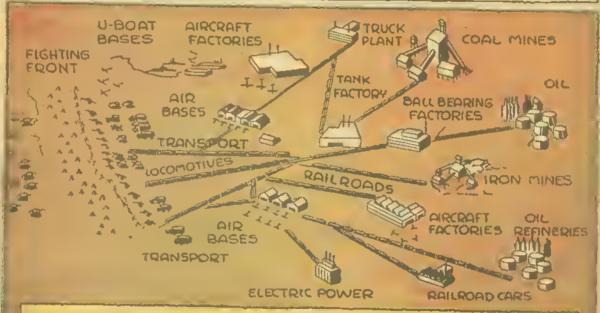
THE ALASKAN FLIGHT MADE "HAP" ARNOLD EXTREMELY CONSCIOUS OF THE FACT THAT THE AIRPLANE WAS RAPIDLY SHRINKING THE MAP AND OF AMERICA'S NEED FOR LONG-RANGE, HEAVY BOMBERS AS AN ESSENTIAL DEFENSE WEAPONS IN 1938, AFTER THE DEATH OF HIS SUPERIOR, GENERALDSCAR WESTOVER, "HAP" ARNOLD WAS PROMOTEO TO BECOME CHIEF OF THE ARMY AIR CORPS.





AS THE NAZIS CONTINUED TO SMASH ALL RESISTANCE ON THE CONTINENT. THEIR AIRFORCES DEMONSTRATED AGAIN AND AGAIN THE VALUE OF THE AIRPLANE IN MODERN WAR. THIS WAS JUST WHAT GENERAL THIS WAS BEFORE. THIS WAS

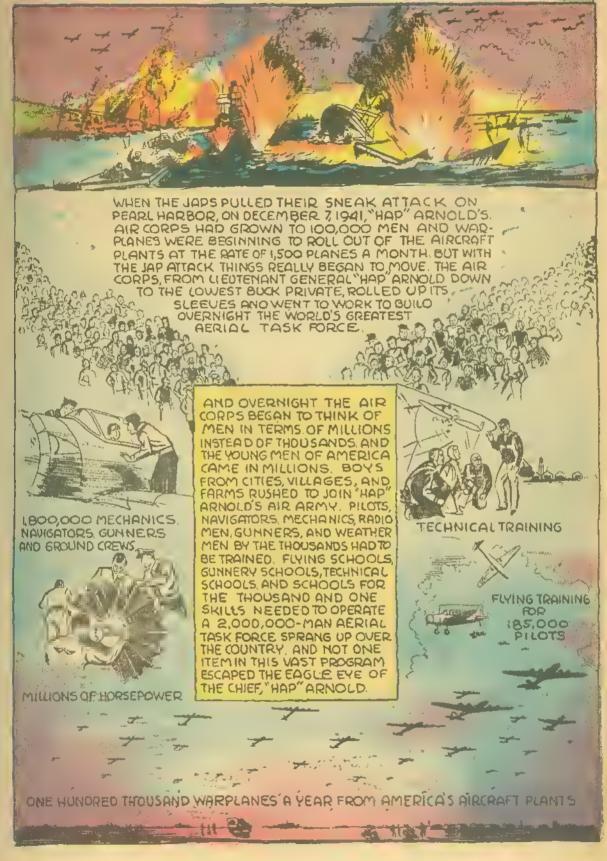
WHAT GENERAL "HAP" ARNOLD AND HIS AIRMEN HAD BEEN PREPARING FOR AND FIGHTING FOR PLANES AND MEN FOR THIS WAS THE AGE OF AERIAL WAR. BUT IN SPITE OF THE HEROIC EFFORTS MEN LIKE "HAP" ARNOLD, THIS COUNTRY WAS FACING WAR WITH ONLY A FEW WARPLANES AND A FEW PILOTS.



AFTER THE NAZIS HAD BEGUN THEIR DEVASTATING AIR RAIDS ON ENGLAND, GENERAL ARNOLD, AS CHIEF DF THE U.S. ARMY AIR FORCES, WENT THERE TO GET A FIRSTHAND VIEW DF THE WAR. GENERAL ARNOLD RETURNED WITH THE CONVICTION THAT ONLY OVERWHELMING AIR POWER COULD STOP THE NAZIS. BY THAT TIME THIS COUNTRY REALIZED ITS DANGER AND IN JUNE, 1941, GENERAL ARNOLD WAS GIVEN THE TASK OF BUILDING AND DIRECTING THE WORLD'S GREATEST AIR FORCE.

GENERAL ARNOLD AND HIS STAFF WERE READY. THEY KNEW THAT THE QUICKEST WAY TO SMASH THE NAZIS WAS NOT TO DESTROY THEIR PLANES IN THE AIR., BUT TO SMASH THE FACTORIES THAT BUILT THE PLANES, WITHOUT GASOLINE NAZI AIRPLANES COULD NOT FLY. WITHOUT BALL BEARINGS ENGINES. TANKS, AND AUTOMOBILES COULD NOT BE BUILT. SO THE THING TO DO WAS TO DESTROY THE NAZIS' OIL SOURCES, THEIR BALL BEARING FACTORIES, RAILROADS, TRANSPORT, AND COMMUNICATIONS.









A MESSAGE TO THE YOUNG PEOPLE OF AMERICA FROM THE MAN WHO COMMANDED THE WORLD'S GREATEST AIR FORCE. GENERAL HENRY H. ARNOLD WARTIME CHIEF OF THE U.S. ARMY AIR FORCES

HEADQUARTERS, ARMY AIR FORCES WASHINGTON

7 January 1946

Mr. Jim Ray, Editor Jim Ray's Aviation Sketchbook New York 13, New York

Many thanks for your letter of Decamber 21 inviting me to send a message to the young people of Dear Mr. Ray. America. I am very interested in our young people and it is with pleasure that I forward the enclosed state-Again, my thanks for your thoughtfulness. ment.

Sincerely,

Commanding General, Army Air Forces

HEADQUARTERS, ARMY AIR FORCES WASHINGTON

YOUNG PEOPLE OF AMERICA:

The future of American aviation rests with you, the youth of America. All of us who had to do with the building of the great Army Air Forces that cleared its ensmise'from the sky have known for years that the domain of the sir is presminently for the young.

Never was eviation's need for healthy, elect youth made clearer than during the past war. Then the need became the need of our Country for if we were to be victorious we had to have forces in the sir superior to anything the snemy could send up. The need wes for superiority in planes and equipment but above all superiority in man.

We got that superiority - in planee and equipment, and in man. From farme and from cities, from echools and from jobs came our young men and young women, to plan and build and fly and maintain the mighty, air forces that brought us victory. The victory that justified the faith we ell had in American youth and air power.

Now we have turned into a time of peace, which I hope will be time without end. The rewards of peace are ever greater than the rewards of war. Peacetime aviation lies ahead, promising a rich harvest of opportunity and eatisfying experience for air-minded youth and providing also the training ground, the know-how and experience for time of emergency.

For her future eccurity America needs a thriving percetime aviation industry and a great commercial eviation. She needs intense public interest and aupport of eviation. She needs thinking and planning and scientific research. She needs healthy young men and women, healthy mentally, spiritually and physically. She needs all these things to support and sustain her military eir forces.

Once again America expects to find her etrength in her youth. She looks to you for the best pilote on earth, for the best navigators, the best radio operators, the best mechanice, the best radar experts, the best designers, the best scientists, the best of every person who helps make up the big family of the air.

America puts her faith in you. Tomorrow the sir will be yours. I know you will trest your heritage wisely and well.

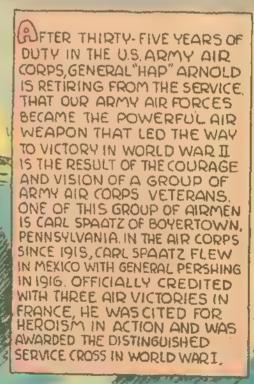
H.H. ARNOLD, Commanding General, Army Air Forces

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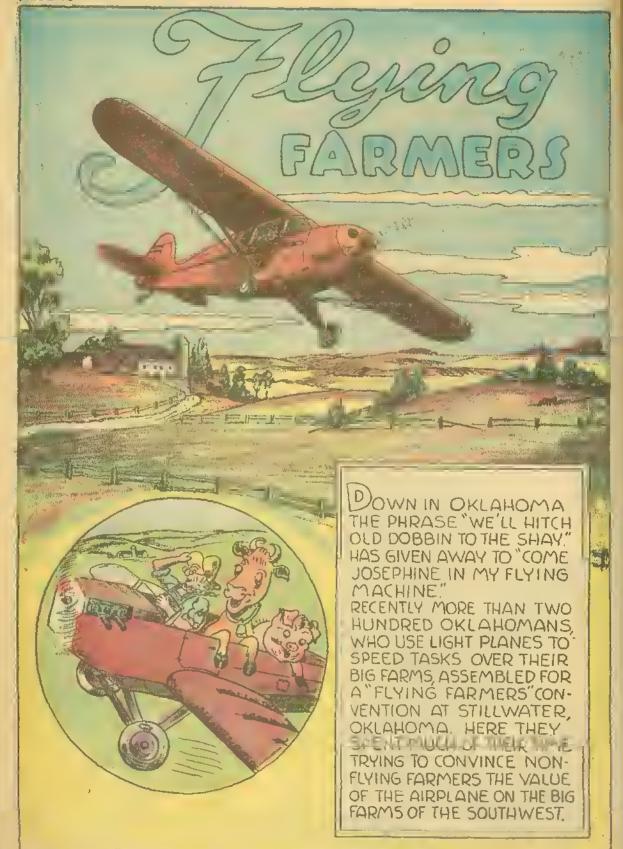


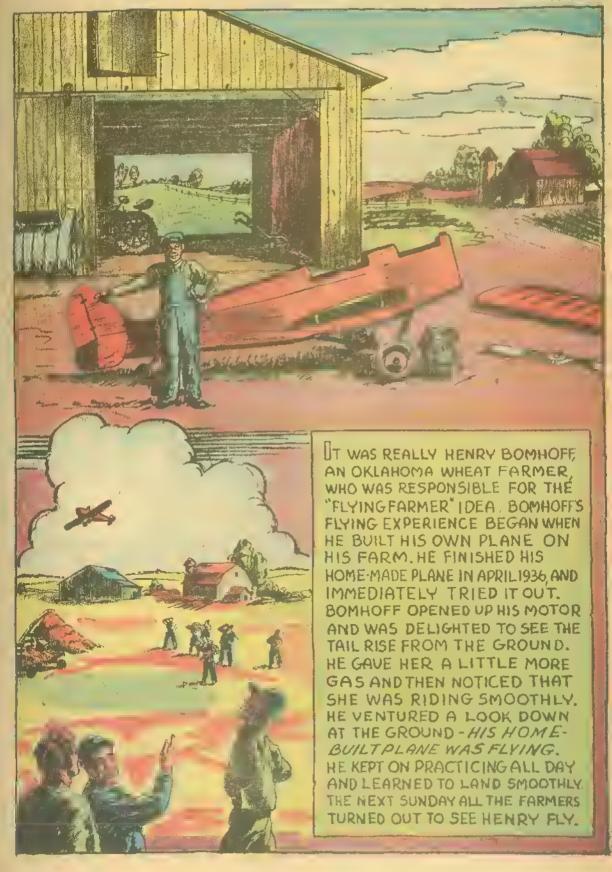
CARL SPAATZ

GENERAL SPAATZ, WHO SUCCEEDS "HAP" ARNOLD AS CHIEF OF THE ARMY AIR FORCES, IS THE MAN WHO COMMANDED THE AMERICAN STRATEGIC AIR FORCES THAT DESTROYED THE NAZIS' CAPABILITY TO WAGE WAR.





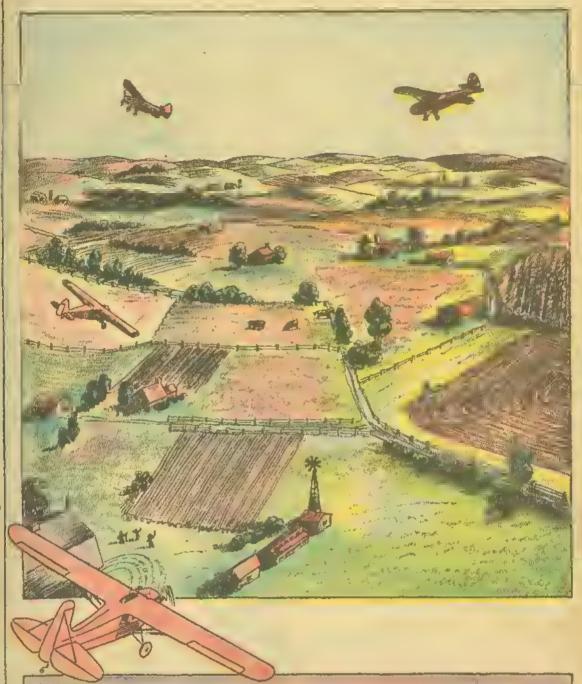




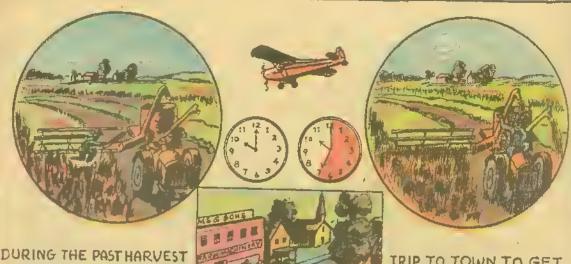
HENRY BOMHOFF FLEW HIS HOME - MADE PLANE 1800 HOURS BUT HAD TO DISMANTLE IT AFTER PEARL HARBOR, BUT HENRY'S EXPERIENCES IN USING HIS FIRST PLANE IN COVERING HIS 320 ACRE FARM IMPRESSED MANY OF HIS NEIGHBORING FARMERS. HE ALSO USED HIS PLANE TO HELP GET RID OF THE COYOTES ON HIS FARM. FLYING LOW AND USING A 12-GAUGE SHOT GUN HENRY'S GUN-NER SHOOTS THE COYOTES FROM THE MIR THEIR PEROLD TO DATE 15 785 COYOTES, OF COURSE TODAY HENRY FLIES A STORE BOUGHT' PIPER "CUB"







HENRY BOMHOFF SOLD THE OKLAHOMA FARMERS. SO WELL, ON THE BUSINESS OF COMBINING FARMING AND FLYING THAT NOW AIRPLANES ARE ALMOST AS COMMON AS COMBINES IN THAT PART OF THE COUNTRY. THE MEN AND WOMEN, WHO BEGAN TO THING HOLD INTEREST IN FLYING WERE LIKED INTEREST OF THE COUNTRY.



SEASON THE COMBINE OF ONE OF FLYING FARMERS'

IN HIS LIGHT PLANE, MADE A FIFTY-MILE ROUND TRIP TO TOWN TO GET
THE NECESSARY SPARE
PARTS, AND HAD HIS
COMBINE OPERATING
AGAIN 35 MINUTES AFTER
IT BROKE DOWN,

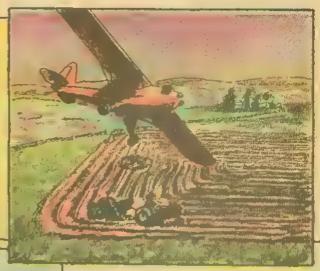


OTHER FARMERS WHO HAVE PASTURE LAND HIGH UP IN THE HILLS USE LIGHT PLANES TO CHECK UP ON THEIR HERDS. THEY CAN JUMP INTO THEIR LITTLE PLANES AND FLY UP INTO THE HILLS AND LOOK OVER THEIR STOCK FROM THE AIR, WHEN THE ROADS ARE TOO BAD TO GET TO THEM IN A CAR.

COUNTY AGENT, JIM ROSSON, OF ROGERS COUNTY, OKLAHOMA, GOT THE FLYING "BUG" FROM THE "FLYING FARMERS" AND LEARNED TO FLY IN 1942. THE NEXT SPRING JIM WAS ABLE TO CHECK THE DAMAGE CAUSED BY A FLOOD. BY STUDYING THE DAMAGE BY FLOODS FROM THE AIR HE COULD PLAN METHODS OF CUTTING DOWN FLOOD LOSSES.



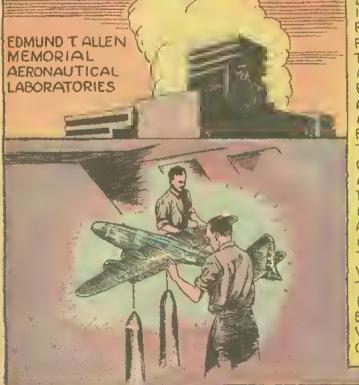
IN ADDITION TO SURVEYING THE DAMAGE DONE BY FLOODS. THE COUNTY AGENTS AND FARMERS CAN STUDY SOIL EROSION FROM THE AIR AND TAKE STEPS TO PREVENT IT. A "FLYING FARMER COMMUTES BY PLANE FROM HIS FARM WHERE HE LIVES, TO HIS CATTLE RANCH 100 MILES AWAY. SOMETIMES A RANCHER WILL LAND AND PICK UP A CALF AND FLY IT TO ANOTHER PASTURE.



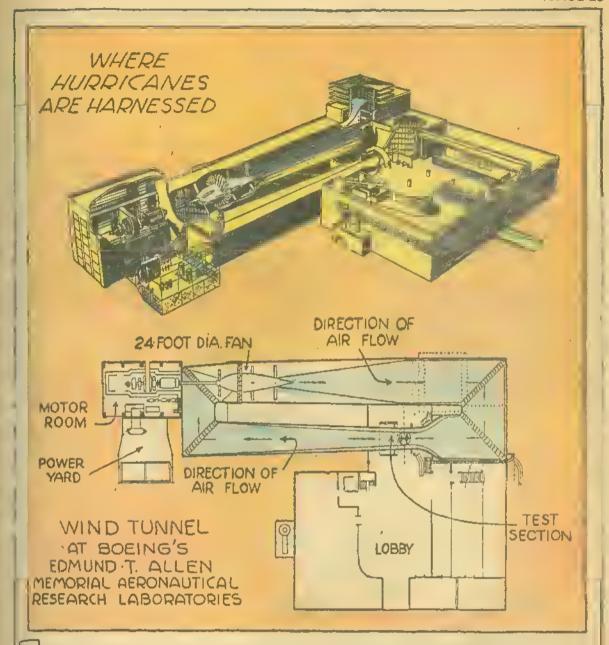


TOMORROW'S AIRPLANES FLY: HERE



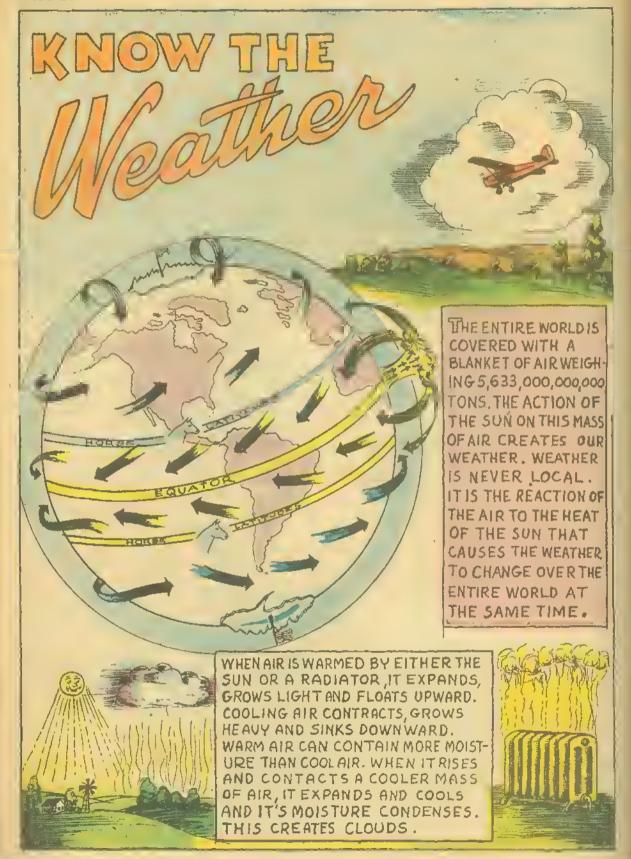


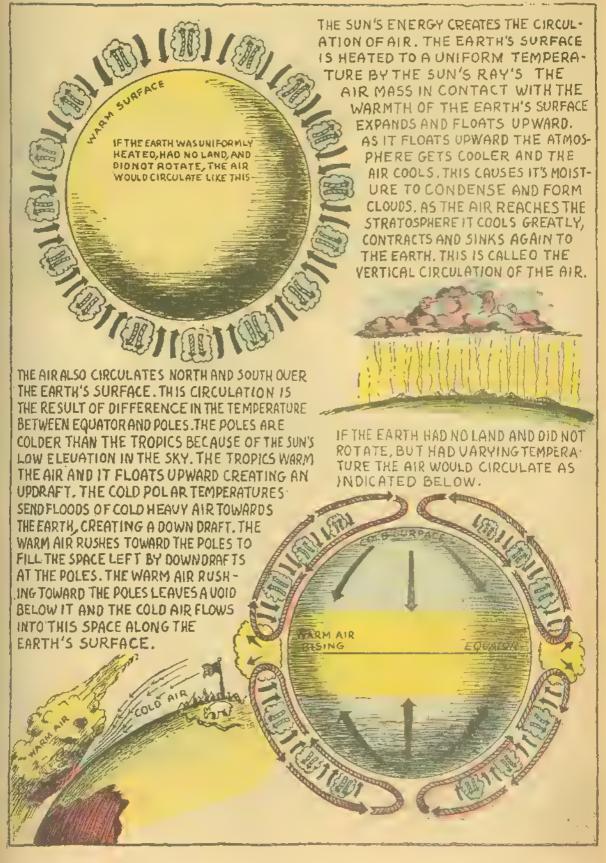
OMORROW'S PLANES DO FLY IN THE BOEING WIIND TUNNEL, FOR HERE ENGINEERS PLOT FURTHER REFINEMENTS FOR TODAY'S PLANES AND TEST NEW AND REVOLUTIONARY DESIGNS FOR TOMORROW'S AIRPLANES. **ACCURATE SCALE MODELS WITH** A WINGSPAN OF USUALLY TEN FEET ARE USED FOR WIND TUNNEL TESTS, MODELS ARE MOUNTED ON SUPPORTS AND THE AIR FLOWS AROUND THEM AT SPEEDS UP TO 700 MILES PERHOUR, THE MODEL IS CONTROLLED AND ITS ACTIONS ARE RECORDED ELECTRIC-ALLY FOR ENGINEERS WHO STUDY THE TESTS IN ROOMS THAT HAVE. WINDOWS FACING THE MODEL! THIS GIANT LABORATORY BUILT BY BOEING, IS A MEMORIAL TO EDMUND ALLEN, BOEING TEST PILOT, WHO GAVE HIS LIFE IN THE CAUSE OF AERONAUTICAL RESEARCH.

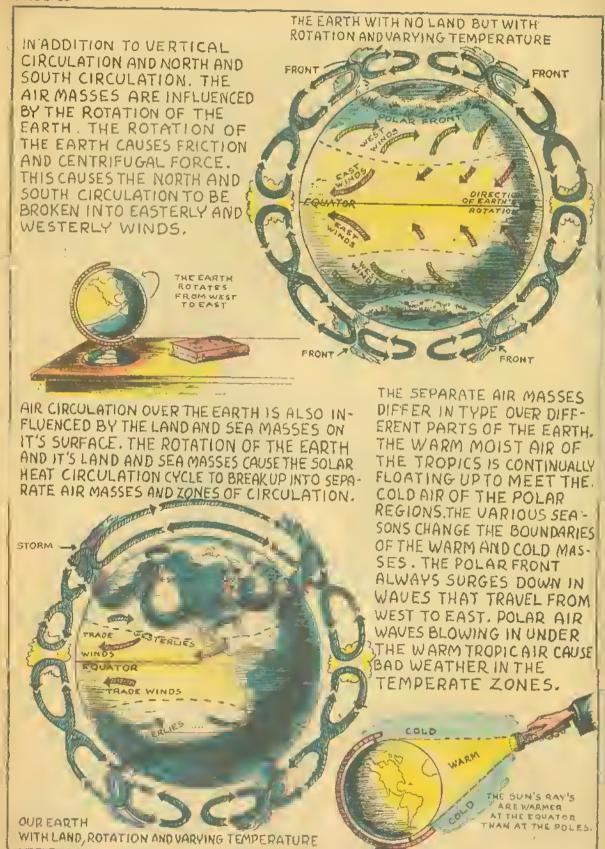


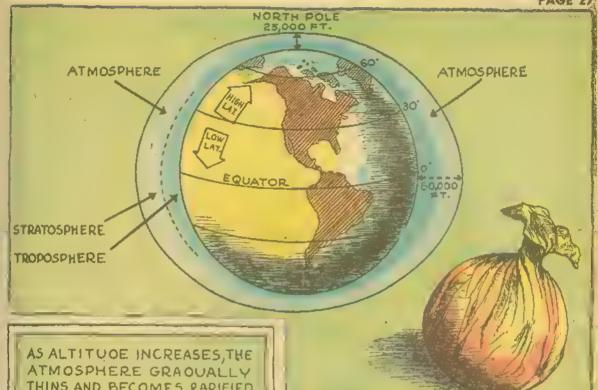
HE WIND TUNNEL IS CONSTRUCTED SOMEWHAT ON THE ORDER OF A RACE TRACK FOR WIND, IT IS SHAPED LIKE A RACE TRACK TOO, AND THE WIND GOES 'ROUND AND 'ROUND THE RUNWAY. THE WIND IS WHIPPED UP BY A 24-FOOT DIAMETER FAN. THE FAN IS POWERED BY A GIANT MOTOR CAPABLE OF TURNING UP 18,000 HORSEPOWER. THE FAN RUNS UP TO SIA REVOLUTIONS PER MINUTE, ITS SIXTEEN LAMIN ATED SPRUCE BLADES WHIRL AT 420 M.P.H., I REACHES THE SPEED OF SOUNO.

WITH JUST ONE-EIGHTH INCH CLEARANCE. THE AIR TRAVELS AT ABOUT 100 MILES PER HOUR THROUGH MOST OF THE TUNNEL. THE BULK OF THE TUNNEL IS 27/2 BY 27/2 FEET. ONE NINTH OF IT MEASURES ONLY BX 12 FEET. THIS IS THE SECTION WHERE IT PICKS UP SPEED AND WHIPS THROUGH THE BOTTLE-NECK AT TERRIFIC SPEED, IT IS IN THIS . SECTION THAT THE MODELS ARE PLACED FOR THEIR TESTS, IN THE BOEING TUNNEL MODELS CAN BE TESTED IN AIR THAT







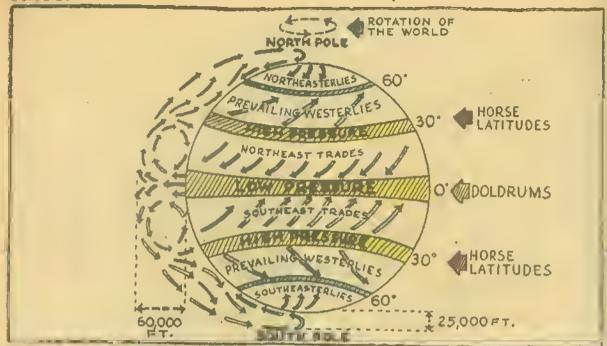


AS ALTITUDE INCREASES, THE ATMOSPHERE GRADUALLY THINS AND BECOMES RARIFIED.

VA. THINS AND BECOMES RARIFIED.

HALF THE TOTAL WEIGHT OF THE ATMOSPHERE LIES WITHIN THE FIRST 18,000
FEET. THREE-FOURTHS OF THE TOTAL
ATMOSPHERIC WEIGHT IS BELOW 36,000
FEET. THE REMAINING FOURTH IS
DISTRIBUTED FROM 36,000 FEET UPWARD TO SEVERAL HUNDR"D MILES FROM
THE EARTH'S SURFACE. ALL FACTORS
WHICH MAKE UP WEATHER; CLOUDS,
RAIN, SNOW, AND ICE OCCUR IN THE
TROPOSPHERE, THE BAND OF ATMOSPHERE CLOSEST TO THE EARTH.

THE EARTH IS SURROUNDED BY A BLANKET OF GAS WHICH IS CALLED ATMOSPHERE. THE VERTICAL THICK-NESS OF ATMOSPHERE IS SO SMALL IN COMPARISON TO THE SIZE OF THE EARTH THAT IN PROPORTION. IT CAN BE COMPARED TO THE THICK-NESS OF A SHEET OF TISSUE PAPER TIGHTLY WRAPPED AROUND AN ORANGE. ATMOSPHERE IS COM-POSED OF ABOUT 99 PER CENT OXYGEN AND NITROGEN. THE REMAINING ONE PER CENT IS MADE UP OF SEVERAL OTHER GASES, INCLUDING WATER VAPOR. THIS BLANKET OF GAS NEXT TO THE EARTH VARIES IN THICKNESS FROM 60,000 FEET IN THE TROPICS TO ABOUT 25,000 FEET OVER THE POLAR REGIONS. THE LOWER PORTION NEXT TO THE EARTH'S SURFACE, IS CALLED THE TROPOSPHERE. THE UP-PER PORTION IS CALLED THE STRATOSPHERE.

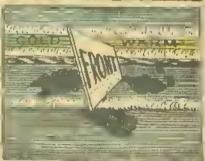


AIR MOVES OVER THE EARTH'S SURFACE IN A FIXED PATTERN. IT IS HEATED, EXPANDED AND THEREFORE RISES OVER THE EQUATOR. IT FLOWS TOWARD THE POLES AT HIGH LEVELS. AS IT REACHES THE POLAR REGION IT DROPS AND FLOWS OUTWARD AT LOW LEVELS. THE NORTHERN HEMISPHERE IS OIVIDED INTO THREE GENERAL ZONES. ZONE ONE IS BETWEEN THE EQUATOR AND LATITUDE 30° NORTH. THIS AREA HAS MANY SHOWERS, THUNDER STORMS, AND HEAVY RAINS. ZONE TWO IS BORDERED ON ONE SIDE BY THE HIGH BAROMETRIC PRESSURE OF ZONE ONE

AND ON THE OTHER BY THE LOW PRESSURE OF THE COLD POLAR AIR OF ZONE THREE. THE WINDS FLOW FROM THE HIGH PRESSURE AREAS TOWARD LOW PRESSURE AREAS, WITH DEFLECTION TO THE RIGHT ON THE NORTHERN HEMISPHERE, CAUSED BY THE EARTH'S ROTATION. THE WINDS OF ZONE TWO ARE SOUTHWESTERLY. THE WINDS GAIN STRENGTH AS THE LATITUDE INCREASES. COLD AND WARM AIR MASSES DO NOT MIX AND AS A RESULT WHEN THEY MEET THERE IS A CONFLICT, WHICH CAUSES THE WEATHER OVER THEIR MEETING PLACE TO CHANGE.

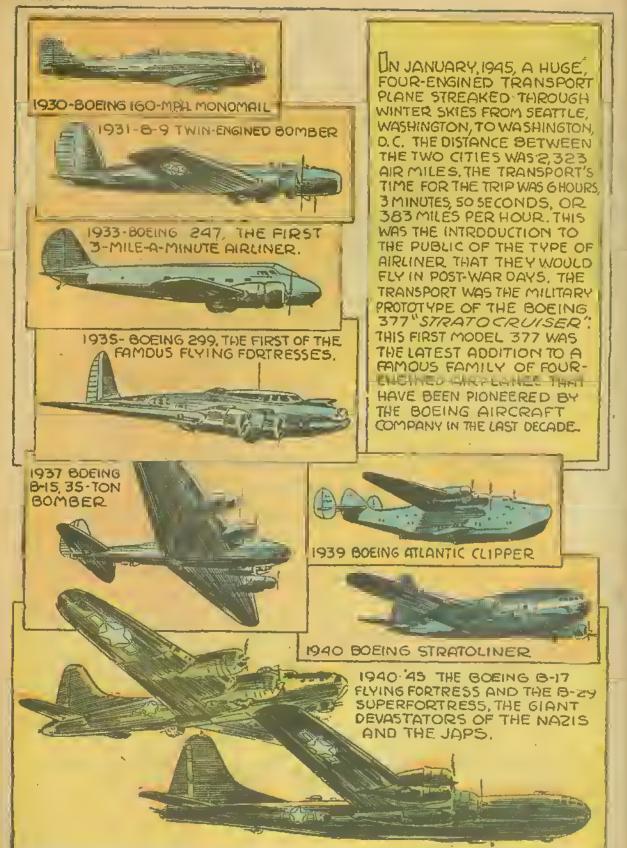


THE AIR THAT IS HEATED BY THE WARMTH OF THE TROPICS RISES AND FLOWS TOWARD THE NORTH POLE IF THIS PROCESS WAS CONTINUED EVENTUALLY ALLOF THE AIR WOULD BE NORTH OF 60° NORTH AND THERE WOULD BE NO AIR IN THE EQUATORIAL ZONE . BUT THE SYSTEM OF CIRCULATION UF AIR PREVENTS THIS. AS WARM AIR AND COLD AIR DO NOT MIX READILY, EACH MASS TENDS TO STAY INTACT. THE BOUNDARY BETWEEN THEM IS CALLED A "FRONT". COLD AIR IS HEAVIER THAN WARM AIR AND ASTHE AIR PILES UP THE COLD AIR SLIDES IN UNDER THE WARM AIR FORC-ING IT UP UNTIL IT COOLS. THIS CONDENSES THE WARM AIR CREATING RAIN DR SNOW.

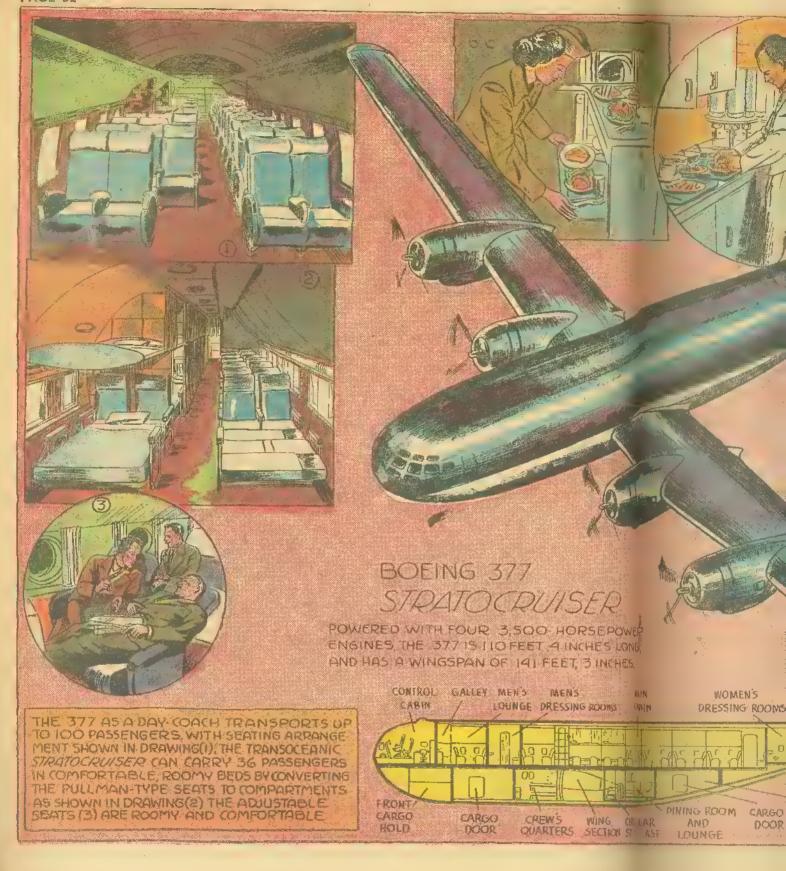


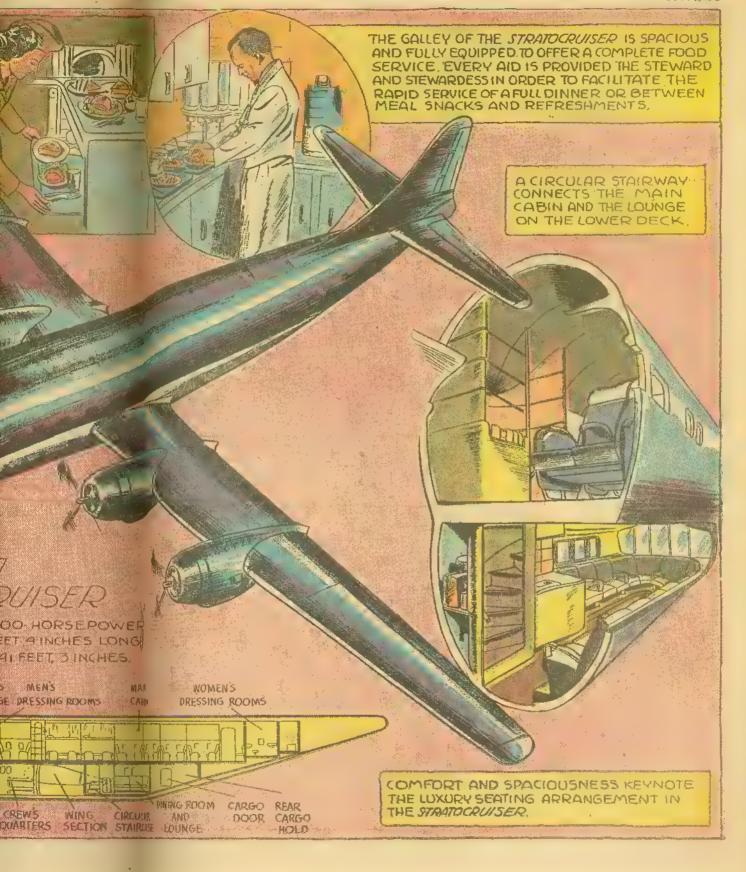








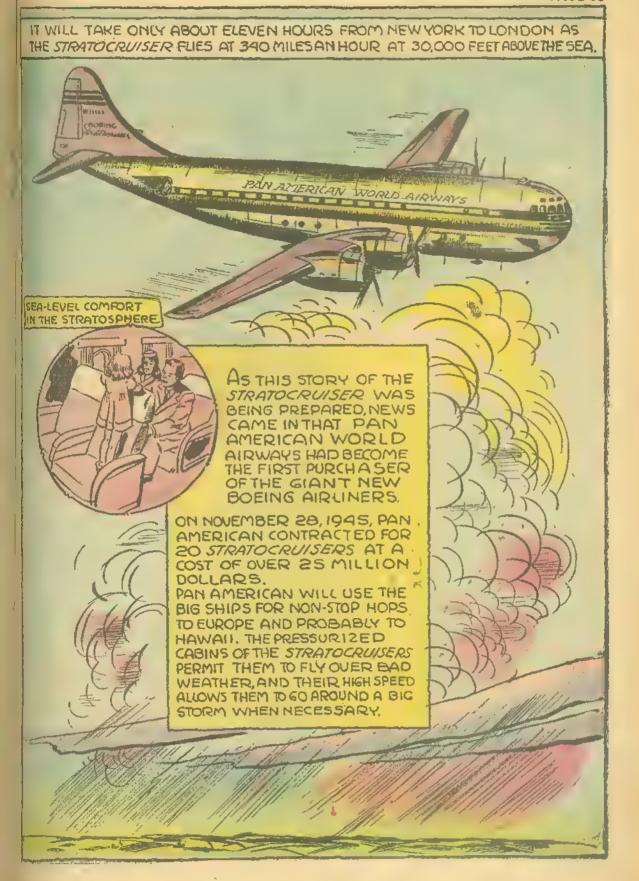






JUST OF A INTO AN IN A CO HOURS THAT IS YOU LE FRONT CREW OF PILOT, OR SIT IN OWELL-UN THEM THAT IS ARE EAR OIG WINTHE THE THE OF 14,0 PRATT A SIX-M

UST A FEW YEARS AGO, A PILOT OF A TRANSPORT PLANE SQUIRMED INTO AN UNCOMFORTABLE BUCKET SEAT IN A COLD COCKPIT AND FLEW FOR HOURS IN A CRAMPED POSITION. THAT IS HARD TO IMAGINE WHEN YOU LOOK AT THE SPACIOUS "FRONT OFFICE" OF THE FLIGHT CREW OF A NEW STRATOCRUISER. PILOT CO-PILOT, AND FLIGHT ENGINEER SIT IN COMFORTABLE, ADJUSTABLE, WELL-UPHOLSTERED CHAIRS, AROUND THEM THEIR INSTRUMENTS AND CONTROLS ARE EASY TO SEE AND OPERATE. BIE WINDOWS GIVE THEM WIDE VISION. THE THROTTLES CONTROL THE POWER OF 14,000 HORSES IN THE FOUR BIG PRATT AND WHITNEY ENGINES AND A SIX-MILE-A-MINUTE CRUISING SPEED







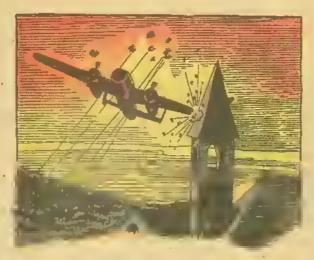


OFALL THE STORIES OF UNUSUAL HAPPENINGS IN WORLD WAR II, NONE ARE STRANGER OR MORE THRILLING THAN THE ONES THAT COME FROM THE BATTLEFIELDS IN THE SKIES. A B-25 MITCHELL BOMBER CAME BACK FROM A MISSION IN ITALY AFTER A DIRECT HIT FROM A CANNON SHELL AND WITH 400 HOLES IN THE VITAL PARTS OF THE PLANE.

SMASHING ENEMY LOCOMOTIVES IN WORLD WAR II WAS AN EXCITING BUT DANGEROUS SPORT. A P-51 PILOT IN ITALY, HAD A WHOLE AMMUNITION TRAIN EXPLODE DIRECTLY UNDER HIS PLANE, THE BLAST BLEW THE FABRIC OUT OF THE ELEVATOR AND RUDDER AND HURLED METAL THROUGH THE RADIATOR AIR SCOUP AND THE WING SURFACES. ONE OUTER WING TIP WAS SMASHED AND THE LEADING EDGE WAS FLATTENED. THE PILOT FLEW HIS SMASHED PLANE FOR TWO AND ONE-HALF HOURS TO LAND SAFELY AT HIS BASE.



AFTER RUNNING INTO A GROUP
OF NAZI FIGHTERS, WHILE HE
WAS ON A PHOTOGRAPHIC
MISSION, A P-SI PILOT FLEW
BACK TO HIS BASE WITH HIS
PLANE LOOKING LIKE A PIECE
OF 'SWISS CHEESE". A 20 MILLIMETER SHELL HAD BLOWN A
SIX-INCH HOLE IN THE RIGHT
WING, ANOTHER SHELL SMASHED
THE STABILIZER FAIRING.
SHATTERING ONE SET OF
ELEVATOR CABLES AND A 50CALIBER SHELL BURST IN
THE UPPER STABILIZER FIN.



AFTER A SUCCESSFUL BRIDGE-BUSTING MISSION DEEP IN BURMA, A B-25 "MITCHELL" RAN INTO AN AREA OF IN-TENSE ANTI-AIRCRAFT FIRE. THE PILOT THREW THE SHIP INTO EVASIVE ACTION AND DIVED LOW TO ESCAPE THE ENEMY'S FIRE, HE HAD FLOWN ALMOST CLEAR OF DANGER, WHEN HE RAN INTO A CHURCH STEEPLE.THE IMPACT SHEARED OFF FOUR FEET OF ONE OF THE WINGS OF THE B-25 AND WRENCHED LOOSE PART OF THE AILERON: ALTHOUGH HIS BASEWAS SEVERAL HUNDRED MILES AWAY. THE PILOT BROUGHT HIS B-25 AND ITS CREW HOME TO SAFETY.

A P-51 ON A STRAFING MISSION, FLYING LOW OVER AN ENEMY, TRANSPORT COLUMN. HIT SOMETHING THAT FLIPPED THE PLANE OVER ON ITS BACK. WHEN THE PILOT RIGHTED HIS SHIP HE SAW THAT HE HADHIT A TELEPHONE POLE AND KNOCK-ED OFF FOUR FEET OF ONE WING. THE AILERON COULD NOT BE USED AND THE SHIP WOULD NOT STAY LEVEL UNLESS A SPEED OF 170 M.P.H. WAS MAIN-TAINED, THE PILOT FLEW 350 MILES TO HIS BASE AND LANDED AT 180 M.PH. (INSTEAD OF THE NORMAL 85 M.P.H.)



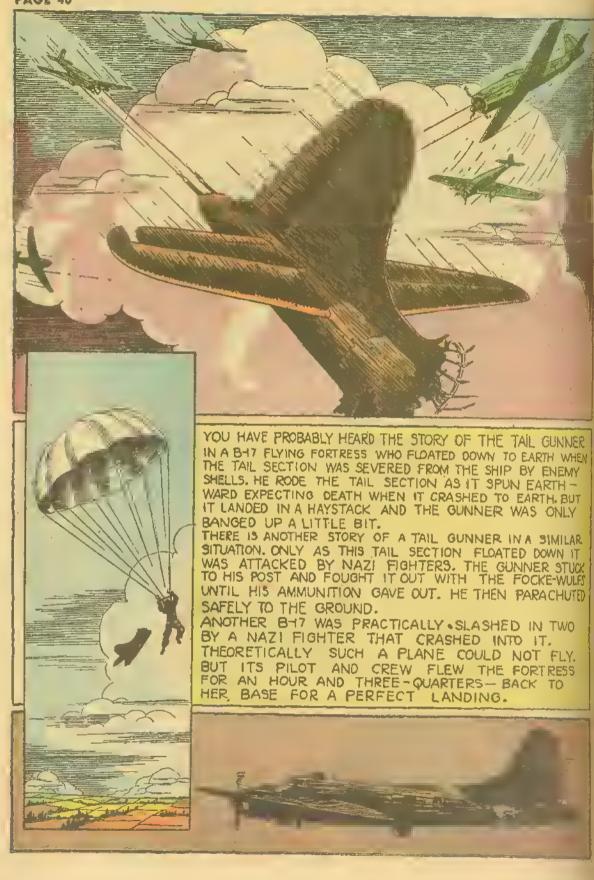


EVEN A DIRECT BOMB HIT COUD NOT DOWN A B-25 IN THE SOUTH PACIFIC, THAT FLEW UNDER A FALLING BOMB, THE MISSILE HIT THE TOP OF THE FUSELAGE BETWEEN THE PILOTS HATCH AND FORWARD OF THE UPPER TURRET. IT THEN BOUNG ED OFF AND HIT THE CENTER SECTION BETWEEN THE RIGHT NACELLE AND FUSELAGE, CAUSING EXTENSIVE DAMAGE—AND FINALLY ROLLED OFF THE EDGE OF THE RIGHT WING.

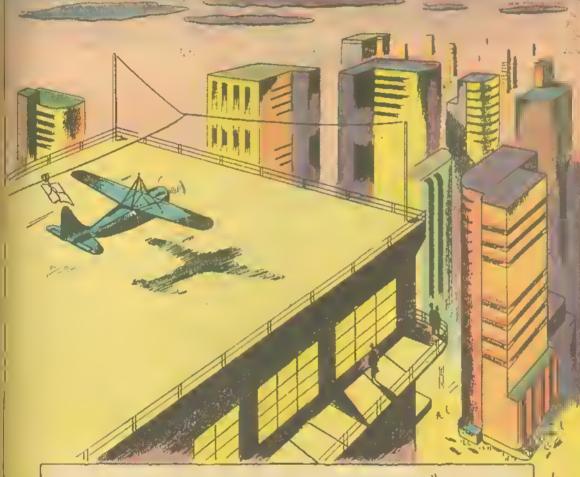


RETURNING FROM A RAID ON GERMANY, A CRIPPLED FORTRESS WAS FORCED INTO THE CHANNEL BY NAZI FIGHTERS. THE CREW TUMBLED INTO THE SEA AND SWAM TOWARDES WITH THE ENEMY FIGHTERS SHOWERING THEM WITH LEAD. BUT THE TOP GUNNER, SEEING HIS COMPRADES PLIGHT STUCK WITH THE PLANE AND BLAZED

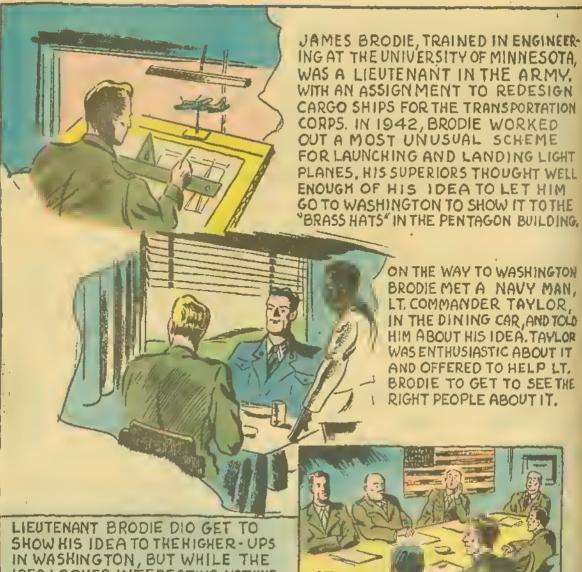




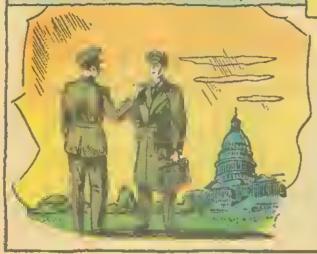




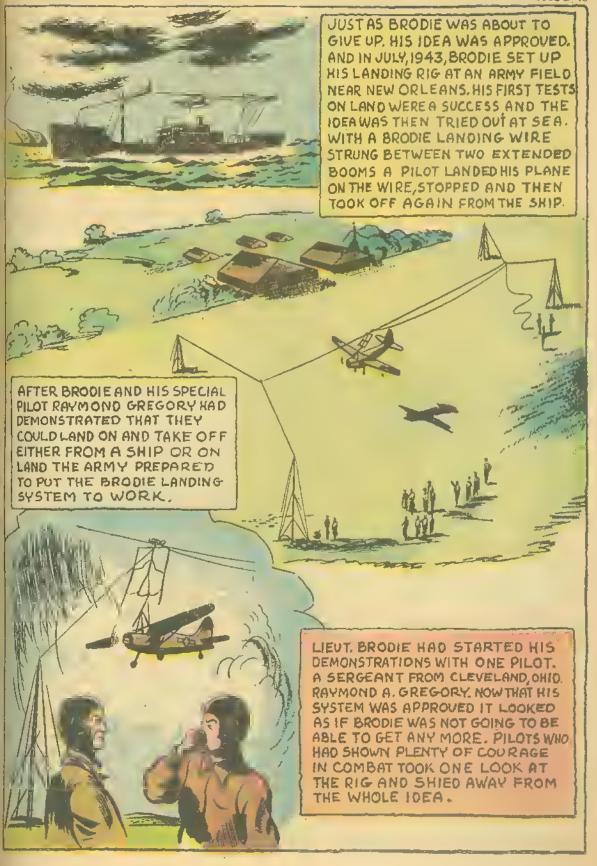
ILOTS HAVE OFTEN USED THE EXPRESSION "HE CAN L' LAND A PLANE ON A DIME". NOW THEY CAN GO ONE BETTER AND SAY "HE CAN LAND ON A WIRE". AND THANKS TO CAPTAIN JAMES H. BRODIE, U.S. ARMY AIR FORCES, A PILOT CAN LAND ON A WIRE, COME TO A STOP, THEN GUN HIS ENGINE AND TAKE OFF AGAIN WITHOUT EVER TOUCHING THE GROUND. CAPTAIN BRODIE'S FLYING TRAPESE WILL MAKE IT POSSIBLE FOR AIRPLANES TO LAND ON AND TAKE OFF FROM THE ROOFS OF BUILDINGS, SHIPS AT SEA, OR ISOLATED JUNGLES AND MOUNTAIN TOPS.

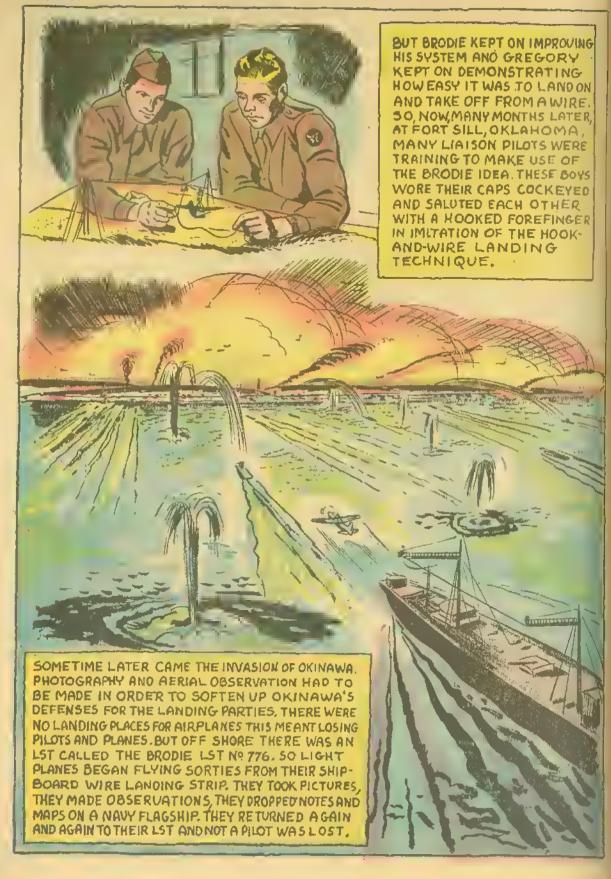


IDEA LOOKED INTERESTING NOTHING WAS DONE ABOUT IT AT ONCE.

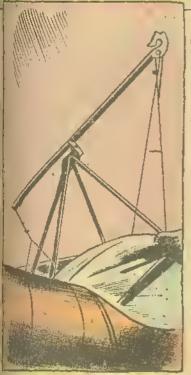


BRODIE SOON FOUND THAT DEVELOP-ING AN UNUSUAL IDEA WAS SIMPLE COMPARED WITH SELLING IT TO THE "BRASS HATS" HIS IDEA WAS TOSSED AROUND LIKE A FOOT BALL AT CONFERENCE AFTER CONFERENCE. BUT NO ONE CAUGHT IT. HE BEGAN TO GET DISCOURAGED AND WAS READY TO GO BACK TO DESIGNING. CARGO SHIPPING SPACE.









THE BRODIE SYSTEM CONSISTS OF FOUR METAL SUPPORTING MASTS(A), EACH ABOUT TWICE AS HIGH AS A TELEPHONE POLE.THEMASTS ARE SETUP IN A RECTANGLE AND THE POLES ARE SPACED 160 FEET APART TO ALLOW FOR THE PLANE'S WINGSPAN. THE PLANE COMES IN BETWEEN THE MASTS (6) THE PLANE FLIES IN UNDER A 500-FOOT CABLE(c) THE HOOK ON THE PLANE(LEFT) ENGAGES A LARGE NYLON LOOP OR SLING(2) RIGHT. A SINGLE-WHEEL TROLLEY (1 RIGHT) SUPPORTS THE AIRPLANE ON THE WIRE, AN ARRESTING BRAKE LINE (D) BRINGS THE AIRPLANE UPON LANDING TO A GRADUAL STOP, WITHOUT A NOTICEABLE SHOCK.



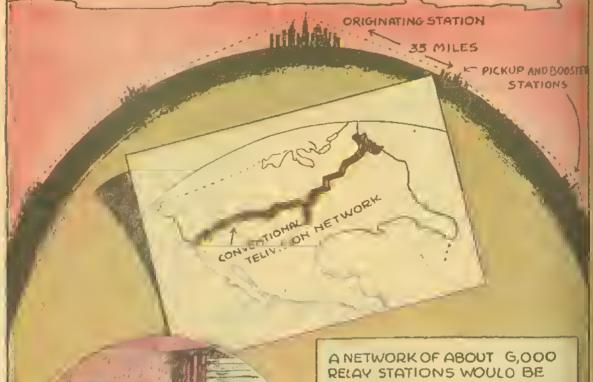
ONTHE TAKE-OFF THE PILOT GUNS THE ENGINE AND GROUND CREWMEN TRIP THE RELEASE AND THE PLANE BEGINS TROLLEY TAKE-OFF RUN. THE PILOT RELEASES THE HOOK FROM THE TROLLEY AND IS AIRBORNE THE TAKE OFF RUN IS FROM 200 TO 400 FEET.



SENDING PICTURES THROUGH THE SKY HAS BEEN PRACTICAL FOR A LEAST TEN YEARS. BUT THE COST OF PRODUCING COAST-TO-COAST TELIVISION HAS BEEN TOO GREAT TO BE PRACTICAL, IN THE PAST, THE RANGE OF TELIVISION PROGRAMS HAS BEEN LIMITED TO 35 MILES, IT SEEMS THAT A 27 YEAR OLD ENGINEER HASNOW FOUND THE ANSWER TO THIS PROBLEM BY TURNING TO AVIATION.



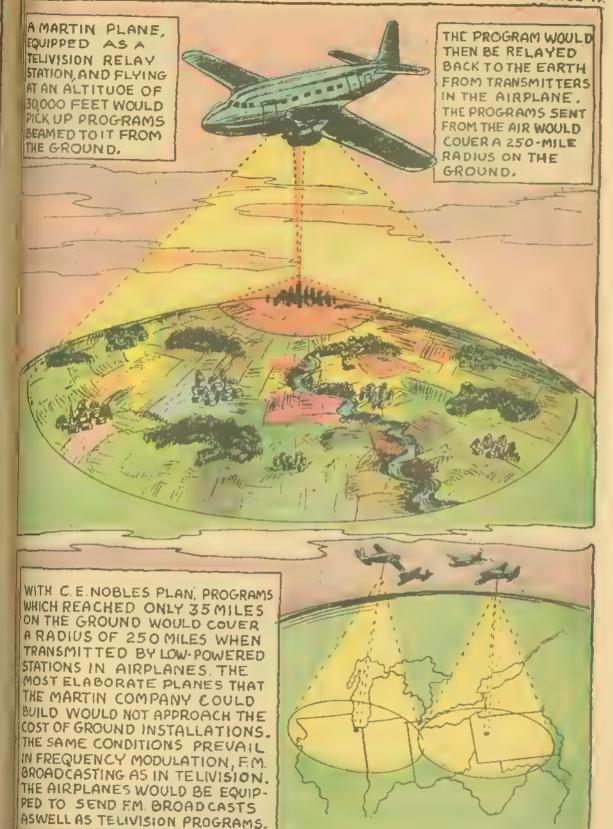






YOUNG NOBLE'S ANSWER TO THIS PROBLEM INTERESTED THE HEAD MEN AT WESTINGHOUSE AND THE GLENN L. MARTIN AIRCROFT COMPANY, SUFFICIENTLY TO WARRANT THOSE COMPANIES TO PROCEED WITH FURTHER RESEARCH ON THE IDEA.

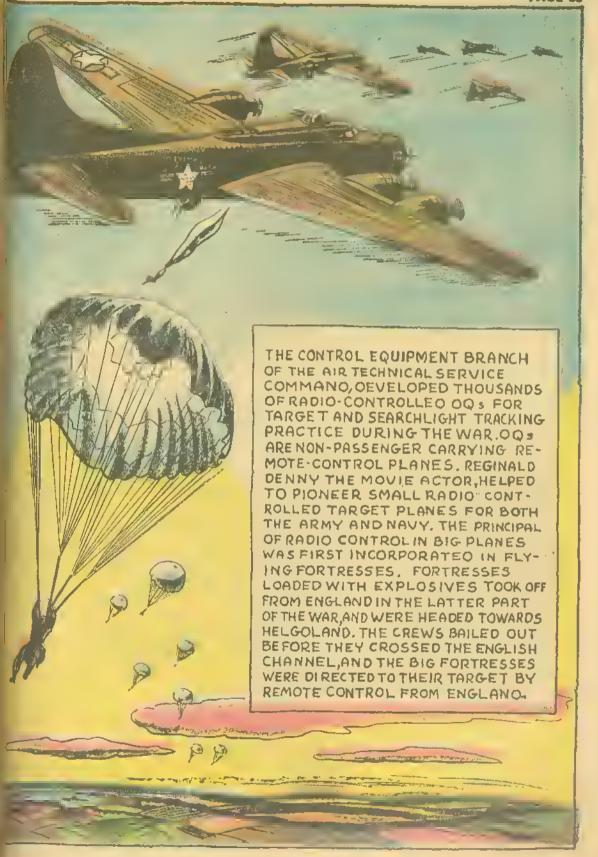
REQUIREO FOR A COAST-TO-COAST TELIVISION HOOKUP, THIS WOULD ALSO MEAN THAT ONLY CITIES ALONG A THIRTY- FIVE MILE BAND ACROSS THE COUNTRY WOULD BE ABLE TO RECEIVE TEUVISION PROGRAMS, HOWEVER EVEN IF THE COST WAS NOT OUT OF REASON IT WOULD BE IMPOSSIBLE TO BROADCAST A TELIVISION PROGRAM ORIGINATING IN NEW YORK CLEAR ACROSS THE NATION. AFTER THREE RELAYS DISTORT-ION OFTEN SPOILS TELIVISION PICTURES AND CREATES UNPLEASANT IMAGES ON THE SCREEN, COAXIAL CABLE OFFERS THE ONLY POSSIBLE METHOD OF TELIVISION TRANS -MISSION FOR LONG-DISTANCE PRESENTATION, COAXIAL CABLE COSTS ABOUT \$3,00 PER FOOT. SO IT WOULD COST \$ 100,000,000 TO TIE NEW YORK AND HOLLY WOOD TOGETHER.

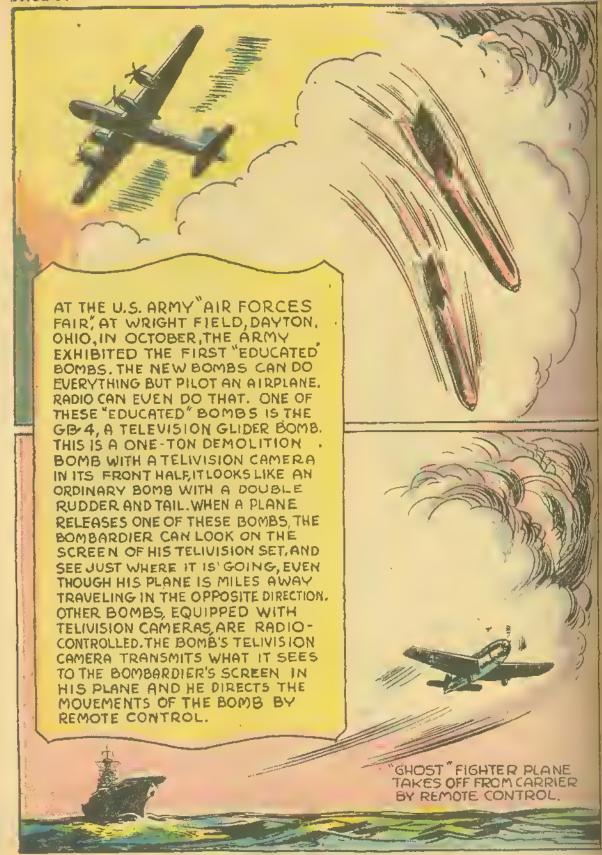














THE NORTH AMERICAN P-51 MUSTANG WAS THE FASTEST AND DEADLIEST SINGLE-PLACE FIGHTER IN ACTION IN WORLDWARII, NOW, THE ARMY HAS JUST MADE PUBLIC A NEW MUSTANG. IT IS THE P-82 TWIN MUSTANG, THE WORLD'S FIRST TWIN FUSILAGE MILITARY AIRCRAFT. WHILE REFLECTING THE INFLUENCE OF THE P-51 MUSTANG, THE P-82 TWINMUSTANG IS A COMPLETELY DIFFERENT AIRPLANE . IT IS THE FIRST FIGHTER DESIGNED ON THE BASIS OF AMERICA'S WORLDWART COMBAT EXPERIENCE. AND REPRESENTS A GREAT ADVANCE IN AIRCRAFT DESIGN.





P-82 ARMAMENT: SIX MACHINE GUNS, 25 ROCKETS AND FOUR BOMBS. SIX FREE - FIRING, 50 CALIBER MACHINE GUNS ARE LOCATED IN THE CENTER SECTION WITH SPACE FOR 400 ROUNDS OF AMMUNITION FOR EACH GUN: FOUR BOMB RACKS, ONE ON EACH OUTER WING AND TWO ON THE CENTER SECTION, WILL CARRY AN 8-GUN NACELLE, WING, ARE EACH ABLE TO CARRY A 1,000 POUND BOMB, ADAPTERS ON CENTER SECTION RACKS MAKE IT POSSIBLE TO CARRY TWO 2,000 POUND BOMBS IN THAT POSITION, FIVE ROCKET -LAUNCHING RACKS CARRY FIVE ROCKETS EACH, GIUING THE TWIN MUSTANG THE

FIRE POWER EQUIVALENT TO A LIGHT CRUISER'S FULL BROADSIDE. TWO RACKS ARE ON EACH OUTER WING PANEL AND ONE IN THE CENTER SECTION. ROCKETS CAN BE RELEASED FROM EITHER COCKPIT. A SHACKLE IN THE CENTER OF THE CENTER WING SECTION MAKING A TOTAL OF 14 MACHINE GUNS.

P-82 HAS A WING SPAN OF 51 FEET, 3 INCHES: A LENGTH OF 38 FEET 3 INCHES AND A HEIGHT OF 13 FEET 8 INCHES. IT WEIGHS 14,350 LBS. EMPTY, GROSS WEIGHT 20,000 LBS.



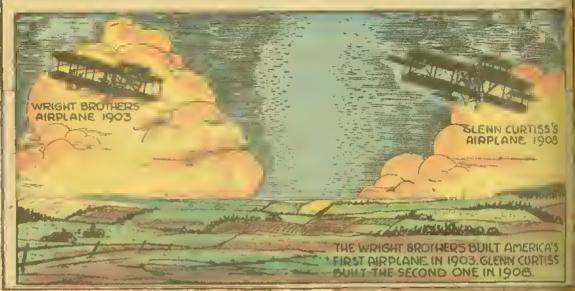


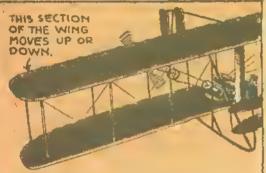
WHILE THE WRIGHT BROTHERS WERE PERFECTING THEIR FIRST AIR PLANE OUT IN DAY TON DHIO, A SELF-TAUGHT YOUNG YANKEE IN HAM MONDSPORT, NEW YORK, WAS COMBINING BICYCLES AND GASOLINE ENGINES TO CREATE SPEEDY MOTOR-CYCLES. THIS YOUNG MECHANIC WAS GLENN H. CURTISS. HE WAS A VERY CLEVER DESIGNER AND HIS ENGINES MADE HIS MOTORCYCLES FAMOUS ON THE RACING TRACKS OF THE COUNTRY IN THE EARLY 1900'S.

iii liay's



IN 1904, THE PIONEER AMERICAN DIRIGIBLE BUILDER, CAPTAIN. TOM BALDWIN, SAW A CURTISS MOTORCYCLE IN CALIFORNIA. HE HURRIED TO HAMMONDSPORT AND BEGGED GLENN CURTISS TO BUILD HIM AN ENGINE FOR HIS NEW DIRIGIBLE, CURTISS BUILT THE ENGINE, THE FIRST CURTISS ENGINE TO FUNCTION IN THE SKIES . CURTISS FLEW BALDWIN'S DIRIGIBLE, BUT HE WAS NOT VERY ENTHUSIASTIC ABOUT FLYING . HOWEVER, IT WAS NOT LONG BEFORE DR. ALEXANDER GRAHAM BELL THE INVENTOR OF THE TELEPHONE, CONVERTED GLENN CURTISS TO A BELIEF IN THE FUTURE OF FLYING.





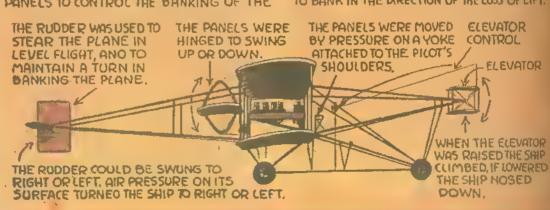
THE WRIGHT PLANE WAS BANKED BY WARPING THE WINGS. WHEN THE WING WAS WARPED DOWN, AIR PRESSURE LIFTED THAT WING TIP CAUSING THE PLANE TO BANK TOWARDS THE DPPOSITE SIDE.



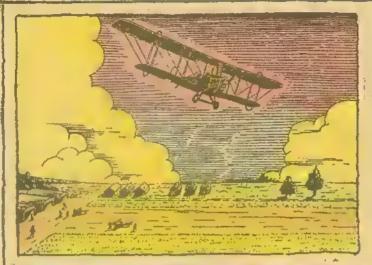
CURTISS ADDED SMALL WING SECTIONS TO HIS PLANE TO CONTROL BANKING, THEY WERE HINGED TO SWING UP DR DOWN, WHEN THE LEADING EDGE WAS RAISED AIR PRESSURE LIPTED THE WING

THE WRIGHT BROTHERS' PATENTS COVERED THE WING WARPING SYSTEM FOR LATERAL CONTROL, WHEN GLENN CURTISS BUILT HIS FIRST PLANE HE DEVISED THE INTER-WING PANELS TO CONTROL THE BANKING OF THE

AIRPLANE. IT WAS NECESSARY TO BANK A PLANE TO TURN IT TO RIGHT OR LEFT. THE LOSS OF LIFT OF ONE WING AND THE ADDITION OF LIFT THE OPPOSITE WING CAUSED THE SHIP TO BANK IN THE DRECTION OF THE LOSS OF LIFT.



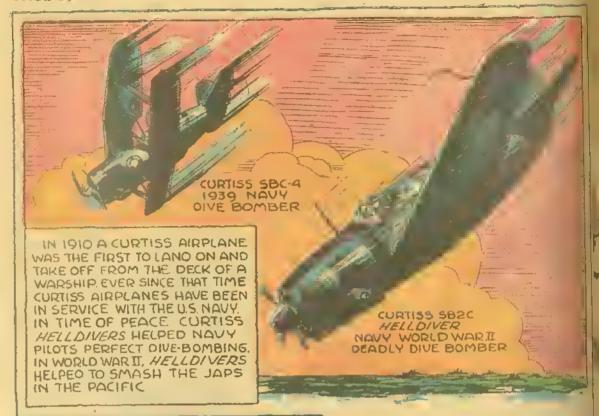




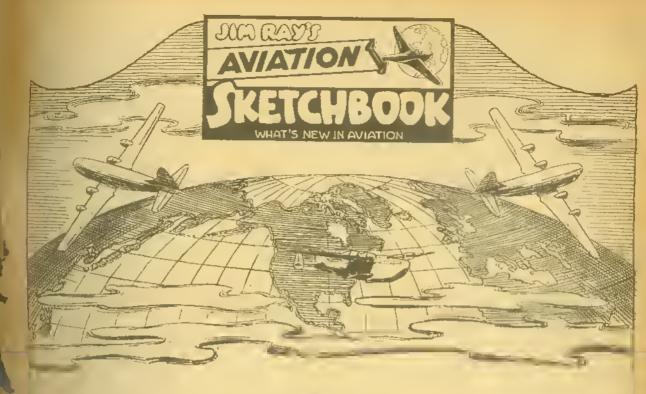
FROM THE TIME HE FIRST BEGAN TO MAKE AIR RECORDS IN 1908, GLENN CURTISS TOOK HIS PLACE ALONGSIDE OF THE WRIGHT BROTHERS AS ONE OF THE FAMOUS PLONEERS OF AMERICAN AVIATION. CURTISS BUILT PLANES FOR THE STRUGGLING YOUNG AVIATION BRANCHES OF THE ARMY AND NAVY. IN WORLD WAR I. THE FAMOUS CURTISS "VENNY" BECAME AMERICA'S MOST USED TRAINING PLANE.









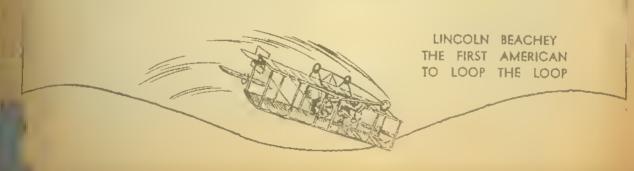


COMING

In the next issue of the Sketchbook Jim Ray is going to bring you another 64 pages of interesting and thrilling picture stories of the men and planes that have made aviation history.

There will be an exciting story of o young mon who mode the globe o map for his oirline—The Story of Juon Trippe, President of Pon American World Airwoys, who plonned and built a 90,000-mile oirwoy that circles the world. There will be o message from Juon Trippe to the boys and girls of Americo. There will be a story of another fomous oirmon who made aviotion history years ago, the story of the greatest "bornstormer" of all the doring young men who flew in the early days of American oviotion.

Also there will be stories and pictures of AIRCRAFT ENGINES—FLY-ING FREIGHTER—THE SKYCYCLE—INSIDE DOPE ON FAMOUS NAZI JET FIGHTERS—LIGHT PLANES—ANOTHER STORY ABOUT WEATHER—AND OTHER STORIES OF AIRPLANES BOTH OLD AND NEW.





WHAT'S NEW IN AVIATION



FLYING FARMERS—GHOST PLANES